Team Game Tournament Instructions

This learning activity appeals to many different types of learner including the cooperative and the competitive learner.

Step1 **Divide the class into teams of four or five. A class of 29 would have 5 teams of 5 and one team of 4.**

Step 2 **Distribute the Practice version of the test to each student and instruct them to answer the questions cooperatively as a team, ensuring that all team members understand how each answer was obtained. The intention is to lift the overall team performance.**

Step 3 **Display a copy of the answers on the OHP or data projector and get each team to check their answers and resolve any issues with their answers.**

Step 4 **Ask the students to sort there team on the basis of their understanding of the topic from very good understanding (A students) to poor understanding (E students). The team of 4 students will only have A to D students.**

Step 5 **Regroup and seat all of the A students in one area of the room, B students in another area etc.**

Step 6 **Give out the Test version questions to each student and instruct them to individually answer the questions under formal test conditions.**

Step 7 **Display a copy of the answers on the OHP or data projector and get each student to mark their answers and then to rank themselves amongst the group of students the y are grouped with. That is, the A students will rank themselves from best to worst score. The student with the best score is given a score of 5` points while the student with the lowest score is given a score of 1 point. Students with equal scores receive the same number of points (e.g. the points distribution could be 5, 4, 4, 4, 1 if three students have the same score). If there are only four students in a group, the scores will range from 5 to 2 points.**

Step 8 **The students recombine into their original teams and total their scores with the largest score winning. Any team with less than 5 students adds the average grade for the team to their score.**

Redox Team Game Tournament:-Practice

1. For each of the following reactions, decide :-
   a) what substance has been oxidized
   b) what substance has been reduced
   c) what substance is the oxidizing agent
   d) what substance is the reducing agent

$CuO + C \rightarrow Cu + CO$

$Zn + 2H^+ \rightarrow Zn^{2+} + H_2$

2. What products are formed when the following substances react.
   MnO_4^-
   I^-
   Fe^{2+}

3. For each substance above, write the colour of the reactant and the product

4. Use oxidation numbers to decide whether oxidation or reduction has occurred in the following examples.

   $Zn \rightarrow Zn^{2+}$
   $O_2 \rightarrow O^{2-}$
   $S_2O_3^{2-} \rightarrow S_4O_6^{2-}$

5 Balance each of the following redox equations

$Fe + H^+ \rightarrow Fe^{2+} + H_2$

$SO_3^{2-} + Fe^{3+} \rightarrow SO_4^{2-} + Fe^{2+}$

Redox Team Game Tournament:-Practice

1. For each of the following reactions, decide :-
   e) what substance has been oxidized
   f) what substance has been reduced
   g) what substance is the oxidizing agent
   h) what substance is the reducing agent

$CuO + C \rightarrow Cu + CO$

$Zn + 2H^+ \rightarrow Zn^{2+} + H_2$

2. What products are formed when the following substances react.
   MnO_4^-
   I^-
   Fe^{2+}

3. For each substance above, write the colour of the reactant and the product

4. Use oxidation numbers to decide whether oxidation or reduction has occurred in the following examples.

   $Zn \rightarrow Zn^{2+}$
   $O_2 \rightarrow O^{2-}$
   $S_2O_3^{2-} \rightarrow S_4O_6^{2-}$

5 Balance each of the following redox equations

$Fe + H^+ \rightarrow Fe^{2+} + H_2$

$SO_3^{2-} + Fe^{3+} \rightarrow SO_4^{2-} + Fe^{2+}$

Redox Team Game Tournament:-Test

1. For each of the following reactions, decide :-
   a) what substance has been oxidized
   b) what substance has been reduced
   c) what substance is the oxidizing agent
   d) what substance is the reducing agent

$Fe + 2H^+ \rightarrow Fe^{2+} + H_2$

$ZnO + C \rightarrow Zn + CO$

2. What products are formed when the following substances react.

   $Cr_2O_7^{2-}$
   Cl_2
   SO_3^{2-}

3. For each substance above, write the colour of the reactant and the product

4. Use oxidation numbers to decide whether oxidation or reduction has occurred in the following examples.

   $Al^{3+} \rightarrow Al$
   $S_2O_3^{2-} \rightarrow S_4O_6^{2-}$
   $IO_3^- \rightarrow + I^-$

5 Balance each of the following redox equations

$Mg + H^+ \rightarrow Mg^{2+} + H_2$

$Cl^- + IO_3^- \rightarrow Cl_2 + I^-$

Redox Team Game Tournament:-Test

1. For each of the following reactions, decide :-
   a) what substance has been oxidized
   b) what substance has been reduced
   c) what substance is the oxidizing agent
   d) what substance is the reducing agent

$Fe + 2H^+ \rightarrow Fe^{2+} + H_2$

$ZnO + C \rightarrow Zn + CO$

2. What products are formed when the following substances react.

   $Cr_2O_7^{2-}$
   Cl_2
   SO_3^{2-}

3. For each substance above, write the colour of the reactant and the product

4. Use oxidation numbers to decide whether oxidation or reduction has occurred in the following examples.

   $Al^{3+} \rightarrow Al$
   $S_2O_3^{2-} \rightarrow S_4O_6^{2-}$
   $IO_3^- \rightarrow + I^-$

5 Balance each of the following redox equations

$Mg + H^+ \rightarrow Mg^{2+} + H_2$

$Cl^- + IO_3^- \rightarrow Cl_2 + I^-$

Redox Team Game Tournament:-Practice Answers

1.

$CuO + C \rightarrow Cu + CO$		$Zn + 2H^+ \rightarrow Zn^{2+} + H_2$	
a. what substance has been oxidized	**C**	a. what substance has been oxidized	**Zn^{2+}**
b. what substance has been reduced	**CuO**	b. what substance has been reduced	**H^+**
c. what substance is the oxidizing agent	**CuO**	c. what substance is the oxidizing agent	**H^+**
d. what substance is the reducing agent	**C**	d. what substance is the reducing agent	**Zn^{2+}**

2. What products are formed when the following substances react.

MnO_4^- ➔ **Mn^{2+}**

SO_3^{2-} ➔ **SO_4^{2-}**

I^- ➔ **I_2**

3. For each substance above, write the colour of the reactant and the product

MnO_4^- ➔ **Mn^{2+}**	
Purple	**Colourless (pale pink)**

SO_3^{2-} ➔ **SO_4^{2-}**	
Colourless	**Colourless**

I^- ➔ **I_2**	
Colourless	**Yellow / brown**

4. Use oxidation numbers to decide whether oxidation or reduction has occurred in the following examples.

(0) (+2) **Oxidation**
Zn ➔ Zn^{2+}

(0) (-2) **Reduction**
O_2 ➔ O^{2-}

(2) (2.5) **Oxidation**
$S_2O_3^{2-}$ ➔ **$S_4O_6^{2-}$**

5 Balance each of the following redox equations

$Fe + H^+ \rightarrow Fe^{2+} + H_2$ becomes **$Fe + 2H^+ \rightarrow Fe^{2+} + H_2$**

$SO_3^{2-} + Fe^{3+} \rightarrow SO_4^{2-} + Fe^{2+}$ becomes **$SO_3^{2-} + 2Fe^{3+} + H_2O \rightarrow SO_4^{2-} + Fe^{2+} + 2H^+$**

Redox Team Game Tournament:-Test Answers

1.

$Fe + 2H^+ \rightarrow Fe^{2+} + H_2$		$ZnO + C \rightarrow Zn + CO$	
a. what substance has been oxidized	**Fe^{2+}**	a. what substance has been oxidized	**Fe^{2+}**
b. what substance has been reduced	**H^+**	b. what substance has been reduced	**H^+**
c. what substance is the oxidizing agent	**H^+**	c. what substance is the oxidizing agent	**H^+**
d. what substance is the reducing agent	**Fe^{2+}**	d. what substance is the reducing agent	**Fe^{2+}**

2. What products are formed when the following substances react.

$Cr_2O_7^{2--}$ ➔ **Cr^{3+}**

Cl_2 ➔ **Cl^-**

SO_3^{2-} ➔ **SO_4^{2-}**

3. For each substance above, write the colour of the reactant and the product

MnO_4^- ➔ **Mn^{2+}**	
Purple	**Colourless (pale pink)**

SO_3^{2-} ➔ **SO_4^{2-}**	
Colourless	**Colourless**

I^- ➔ **I_2**	
Colourless	**Yellow / brown**

4. Use oxidation numbers to decide whether oxidation or reduction has occurred in the following examples.

(0) (+2) **Oxidation**
Zn ➔ Zn^{2+}

(0) (-2) **Reduction**
O_2 ➔ O^{2-}

(2) (2.5) **Oxidation**
$S_2O_3^{2-}$ ➔ **$S_4O_6^{2-}$**

5 Balance each of the following redox equations

$Fe + H^+ \rightarrow Fe^{2+} + H_2$ becomes **$Fe + 2H^+ \rightarrow Fe^{2+} + H_2$**

$SO_3^{2-} + Fe^{3+} \rightarrow SO_4^{2-} + Fe^{2+}$ becomes **$SO_3^{2-} + 2Fe^{3+} + H_2O \rightarrow SO_4^{2-} + Fe^{2+} + 2H^+$**